



Rabbit Computer Vinyl Cutting Machines

Users Operating Manual

Dear Customer,

Thank you for choosing a Rabbit Computer Cutting Machine. Through a rigorous testing process we ensure that every machine shipped is operating to its peak performance.

In order to ensure that this high performance is maintained and to guarantee many years of trouble free and profitable use please read this manual thoroughly to familiarize yourself with the operation of your new machine.

If there are any questions that you have after reading this manual please contact the agent from whom you purchased your machine for clarification.

Statement by Manufacturer

1. The Manufacturer reserves the right to alter the contents of the manual and specifications of the product without notice.
2. If the machine develops a fault please contact your authorized agent straight away for prompt attention to your problem.
3. The Manufacturer is not liable for damage to persons or property caused by improper or unauthorized repairs or use of the machine.
4. This manual and its entire contents including drawings are Copyright “©” Jinan Rabbit Computer Equipment Machinery Company Limited.
5. Windows©, Windows XP©, Roland©, WD40©, Artcut© and Cutting Master© are brand names mentioned in this manual. These names are owned by their respective copyright© holders. Rabbit makes no claim to these names and they are mentioned in this manual only to assist users.

The quality assurance number of this product is:

Q/0102HX-2005

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I. Packing List

Item	Quantity	Item	Quantity
Knife Blades (3pcs/box)	1	Power Cable	1
Blade Holder	1	Fuse	1
Pen Holder	1	Dust Cover	1
Pen Refill	1	Alignment Ruler	1
Serial Cable	1	Software Package	1
User's Manual	1	USB Cable	1

II. Notes

1. Ensure the machine is placed on a stable flat surface and that there is ample room to allow for movement of the material being cut or printed.
2. Never force any part of the machine, guide rollers, metal drive roller & pressure roller latch levers. Such damage will not be covered by warranty.
3. Ensure that foreign objects are not allowed to fall into the gap between the machine and the metal drive roller. This can cause inaccuracies in the work and damage to the machine.
4. Do not allow any magnetic materials to come into contact with the knife dolly also never allow the machine to be operated near strong magnetic fields (electric welders etc). In addition never share the same power supply socket with electric welders etc.
5. Always raise the pressure pinch rollers when the machine is not in use to prevent deformation to the rollers and thus possible inaccurate operation.
6. Disconnect machine from power source when it is not in use.
7. Do not move the knife dolly by hand when the power is off to avoid damage to the pressure bar and the knife blade.
8. Never connect or disconnect any cables to the machine or computer with power switched on to avoid damage to the machine & computer.

III. Routine Maintenance

1. Always keep the machine clean and dust free.
2. Please fit the dust cover when the machine is not in use.
3. If any foreign object happens to fall into the gap between the metal drive roller and the machine body turn the machine off straight away and remove the object.
4. If the LCD does not display when power is switched on check that the power fuse is intact. If not, replace with one of the **exact** type and rating. Using a larger rated fuse can cause expensive and serious damage to the machine. Please contact your dealer if the new fuse blows or the fuse is OK but the machine still does not work.

IV. Initial Set-up

4.1 Installation

Place the machine on a flat level surface and ensure it is stable. Earth the machine to a suitable ground point to ensure reliable operation. An earth wire run to the computer cabinet is a good idea for long term reliability.

4.2 Off-line Test

4.2.1 Reset

Plug the power cable into the socket on the machine and connect it to 220V AC and turn on the power switch. The knife dolly will move to its home position at the right hand side of the machine. The knife holder on the dolly will also move up 1.5~2mm. This is the correct reset sequence.

4.2.2 Testing the correct operation of the knife drive (Z axis)

Press the “Test” key on the cutter machine keypad and the knife holder on the dolly will be driven to the down position, release and it will be driven up (Z axis).

4.2.3 Test cutting speed adjustment

Press the “S+” or “S-” keys on the keypad and the LCD screen will display “SPEED XXX mm”, this presets the machine cutting speed.

4.2.4 Test blade pressure adjustment

Press the “P+” or “P-” buttons to adjust the blade pressure. The LCD screen will display “PRESSURE XXX g”; this presets the blade down force (pressure).

4.2.5 Start position & Test cut

Press the “Off-line” key, the machine goes into Off-line mode and the red LED illuminates. Manual paper movement can now be made using the four arrow keys.

The paper or knife dolly will move according to the button pressed. When satisfied with the paper and knife dolly position press “Test” key and the machine will make a square test cut. This allows for cutting pressure adjustment and knife tip protrusion adjustment.

If the sequence described above works as described, then the cutting machine is working normally.

4.3 On-line with Computer

The cutting machine is connected to the computer (PC) via a serial interface using COM1 or COM2 on the computer.

4.3.1 On-line Operating Sequence

- A. Make sure the cutter and computer are both switched off.
- B. Connect the cutter to the serial interface of the computer (COM1 or COM2) using the serial lead supplied.
- C. Turn on the cutter and computer and wait for the cutters reset sequence to complete.
- D. Open the software for the cutting machine and ensure the correct configuration parameters have been selected.
- E. When the finished work is sent to the cutter it starts cutting/drawing immediately.

V. Control Panel Operating Instructions

Explanation for USB connection

Only when the cutter is on power, connecting the cutter and the computer, the computer shows a virtual removable disk. This is the USB device for the cutter.

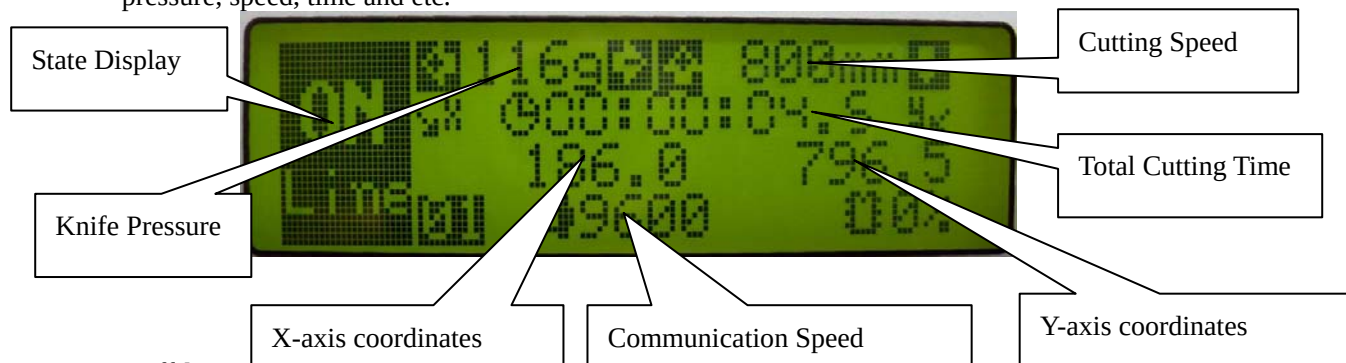


USB connecting sign

5.1 Display Explanation

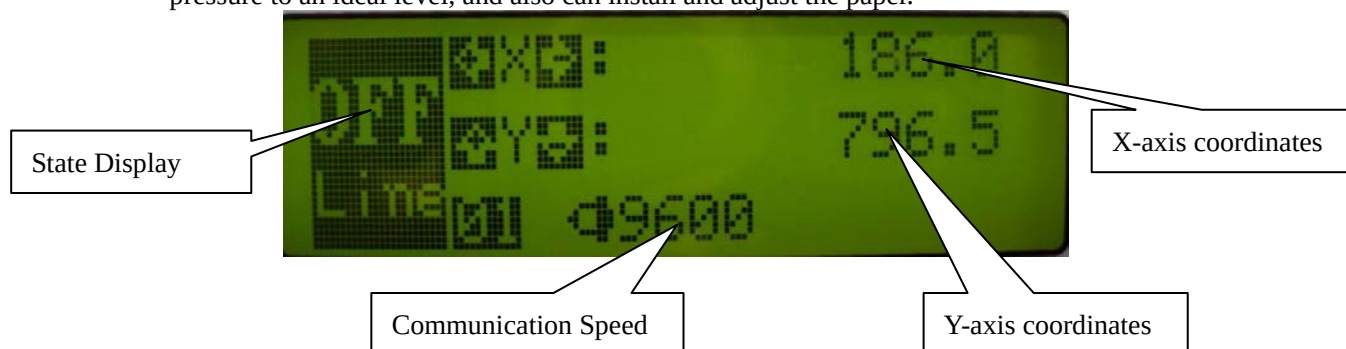
5.1.1 On-line:

The state of cutting, it includes: knife pressure, cutting speed, coordinates, work mode, transmission speed, etc, after received the order to start to cut, the machine works immediately, during the cutting, it displays with real time the coordinate position, the present selected knife pressure, speed, time and etc.



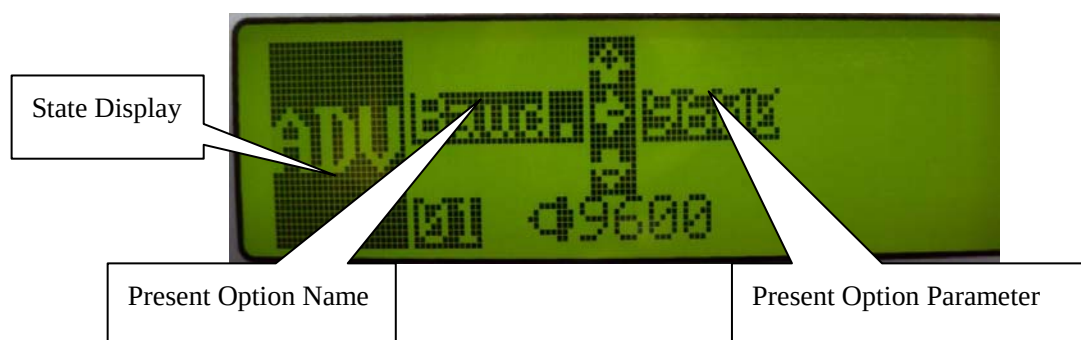
5.1.2 Off-line:

The first state after turning on the machine, the test of cutting can be operated under this state, this step can be used to test the machinery performance, adjust the blade holder position and pressure to an ideal level, and also can install and adjust the paper.

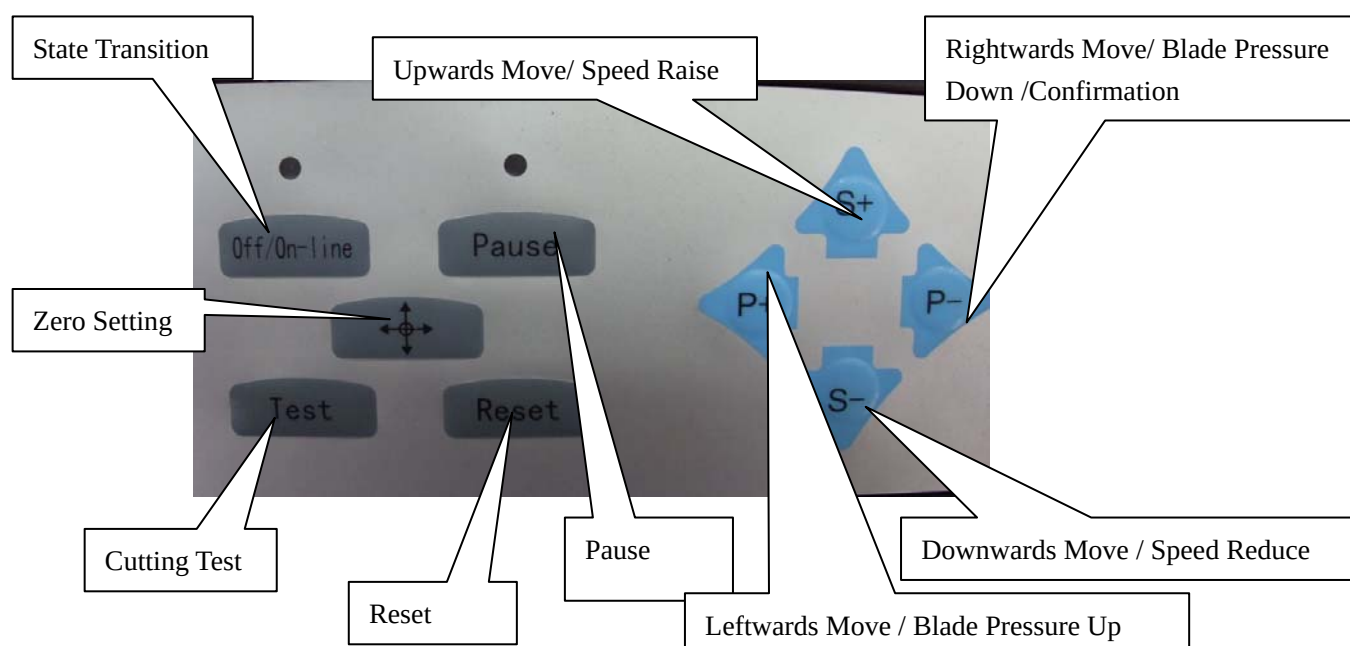


5.1.3 ADVANCE:

The basic setting can be modified under this state, it includes: data transmission speed, transmission mode, zero point operation, time for pen up and down, graphics file format, and cutting test's times, width, graphics.



5.2 Key Explanation



5.3 Explanation for ADVANCE Setting Operation

All the options inside can be modified, the detailed operations are as follows:

- 1、 First press “State Transition” to enter “**ADVANCE**” state
- 2、 Press “Upwards/Downwards Move” keys to choose the options needed modified
- 3、 After make sure the options to be modified, press “Rightwards Move/Confirmation” to enter the parameter setting state of the selected options.
- 4、 Press “Upwards/Downwards move” keys to choose needed option parameter.
- 5、 After finding, press “Rightwards Move/Confirmation” to fix this parameter, then, it will be displayed in black matrix and white letters. If exit directly without pressing “Rightwards Move/Confirmation” to fix the selected parameter, the setting is invalid.
- 6、 Press “State Transition” to exit directly, or press “Leftwards Move” to continue other setting

5.4 Explanation for Cutting Operation

- 1、 Check the settings of cutter before cutting, mainly see whether the data transmission speed setting is accorded with the setting in the computer, the adjustments of knife pressure and speed can be confirmed after checking through cutting test under off-line state
- 2、 During cutting, you can adjust the knife pressure and cutting speed with keys at any moment without stop of machine, if you need to stop it to examine the cutting effect, you can press “Pause” key for pausing for a while, after pause, move dolly and paper with keys, press

“Pause” key again, the cutter will move back to the paused position automatically to continue cutting.

3、 During cutting, press “Reset” key, all the operation will be ended and restored to zero, or after pressing “Pause” key, press “On-line/Off-line” keys to end all the operation

4、 After cutting, the dolly will move to the right-side and stop, waiting for the next operation

5.5 Explanation for Communication Setting

Communication Setting includes communication speed for cutter and computer, and mode for data flow control. The requirement is the setting for cutter and computer should keep in consistent.

The min communication speed is 9600bps, and the max is 115200bps, in principle, the higher speed the better effect, it can not only decrease the static but also make computer end the communication operation soon, so that it will not occupy the computer for too long time. The detailed setting will depend on whether the mainboard of the computer allow reaching 115200bps, if not; you can only reduce the speed and choose a lower level setting.



5.6 Explanation for Blade Up and Down Setting

The shorter time for blade up and down, the faster speed for cutting, and the less for time consumption, on contrary, the cutting time will be longer. But if the time for blade up and down is too short, it will cause blade dragging and lack of cutting, the principle of this setting is that on the premise of no blade dragging and no lack of cutting, the shorter time the better. The usual setting time is for blade-up 10ms, for blade-down 30ms.



5.7 Explanation for Cutting Test

Cutting test is an important operation to check whether the blade pressure and speed are suitable. This test should be operated under off-line state. The relevant parameter for this test can be set under ADVANCE state.

Processes as follows:

1、 Set parameters: enter “ADVANCE” state, select the following 3 options for setting: times test, width test and graphics test.

Times test: a graphics is cut repeatedly for how many times (the actual cutting times will be affected by graphics complexity and plotter’s buffer memory capability for data)

Width test: the max. Width of a graphics

Graphics test: to choose which picture to draw.



2、 Press “State Diversion” key to enter off-line state

3、 Press “Cutting Test” key, the cutter starts to draw for testing, during this process; you can do the following operations as pause, blade pressure adjustment, speed adjustment and etc, just the same as actual cutting.

5.8 Explanation for CURVE speed setting

CURVE speed: the speed for cutting a curve graphics.



5.9 Explanation for electrical Ruler

On condition that the U-disk is used for printing or the certain output center software can not fit your require, the electrical Ruler attached on the machine can help you in the cutting output. Here are the detailed operating processes:

1. Press “State transition” to enter ADVANCE state.

2. Press “Upwards/Downwards Move” to find the following two options, then press “rightwards Move/Confirmation” key for confirming ready for adjusting the parameters of these options.





The above two pictures separately stand for the present X and Y axis cutting percentage, the number 1.00000 means the file is output in 100% size, so the 9.99999 means it is output in 9 times of the actual size. The minimal number is 0. The + - each stands for normal output and reversal output (equals enantiomorphous output).

3. Press “Reset” key, then you can move the shadow rightwards to next number (also with the + - signals), note that the revised numbers are not changed by pressing the “leftwards/rightwards Move” keys, which are for confirming and exiting functions.

4. After moving the shadow to the number you want to change, press “upwards/downwards Move” key to choose from 0 to 9 (also the + - signals).

5. After all numbers/signals have been correctly changed, press “rightwards Move” key for saving the setting and for exit

5.10 Explanation for Back to Zero Operation

For options in ADVANCE state, there is one small practical tool: Back to Zero.

If you want to make pen back to original setting of zero position, you can use this operation.

- 1、 Enter “ADVANCE” state, select “Back to Zero”
- 2、 Press “Rightwards Move/Confirmation”, the cutter will move blade and paper, until the blade back to the coordinate “0,0”.



VI. Loading Paper

1. Switch on the power supply, the machine will perform a reset operation as described in 4.2.1. If the reset sequence does not occur, or there is abnormal operation (all LEDs on) press the “Reset” key to manually reset the machine.
2. Adjust the position of the pressure rollers to suit the width of the material being used. Try to leave the right pressure roller near the edge of the sheet and move the others to suit.
3. Loading paper
 - A. Lift all pressure roller latch levers to the up position.
 - B. Feed the sheet of paper into the machine between the metal drive roller and the rubber pinch rollers.
 - C. Move the paper to align it squarely in the machine, the ruler will assist with this.
 - D. Lower the pressure rollers so that the pinch rollers clamp the material firmly in place (never force the levers, if they are stiff something is wrong, investigate the problem).
 - E. Rotating the pinch rollers with your fingers should move the paper back and forth.
 - F. Press the “Off-line” key and the “Off-line” (red) LED will illuminate. Holding

- the “S-” or “S+” keys will feed the paper through the machine (forward and backwards) so you can run a length of paper through and check the alignment.
- G. The machine is now ready to use.

VII. Cutter Blade & Drawing Pen

Fitting & Adjustment of Cutter Blade

1. Separate the two halves of the blade holder by unscrewing them.
2. Fit the blade into the holder and you will feel it pull into the holder magnetically.
3. Screw the two halves of the holder together again and adjust so that the protrusion of the blade tip is the thickness of the vinyl to be cut. This is a very small protrusion amount and it is best to start with less protrusion rather than more so that the knife blade is not damaged.



Drawing Penholder

1. Unscrew the two halves of the pen holder.
Insert a cheap, commonly available, pen core into the holder (make sure you include the spring) and tighten the screw.

VIII. Technical Specifications

Items	Specification		
Power supply	220V AC $\pm$ 10% switching power supply		
Power consumption	60W ~ 120W (depending on mode of operation)		
Max. paper width & Max. cutting size	HX720	720mm	630 X unlimited length
	HX800	800mm	720 X unlimited length
	HX960	960mm	860 X unlimited length
	HX1120	1120mm	1010X unlimited length
	HX1360	1360mm	1250X unlimited length
Knife blade	Inertia rotary style (Roland© standard type blade)		
Drawing pen	Standard water based ball point pen refill		
Cutting speed	Max. 800mm/S		
Cutting pressure	Min. 10g ~ Max. 250g in 32 adjustable steps		
Resolution	0.0254mm/step		

Repeatability precision	0.12mm
Drive motor types	Stepper motors for X & Y axis – solenoid for Z axis
PC interface	RS232 serial interface
Byte settings	8 data bit, 1 stop bit
Baud rate	9600—115200 bps
Language format	DM-PL or HP-GL
External dimensions	HX720 880 X 240 X 230mm HX800 960 X 240 X 230mm HX960 1100 X 240 X 230mm HX1120 1280 X 240 X 230mm HX1360 1480 X 240 X 230mm
Working Temperature	+5°C ~ +40°C
Working humidity	20% ~ 95%
LCD Language	English
Cache	256 K

IX. Operating Schedule

Item	Method & Procedure
Reset & on-line	Press “Reset” key
Adjust cutter speed	Use “S+” and “S-“ keys
Adjust blade pressure	Use “P+” and “P-“ keys
Blade pressure test	Press “Test” key
Off-line or Pause	Press “Off-line” key, red LED will illuminate
Advance mode	Press “Off-line” key two times, green LED will illuminate
Loading paper	In the off-line mode, press “S+” or “S-” keys
Self check	In the “Off-line” mode, press “Test” key (will draw a square)
Urgent stop	During cutting press “Pause” key, the machine will stop immediately With the red LED illuminating

Appendix 1 Stand packing list & assembling the metal stand

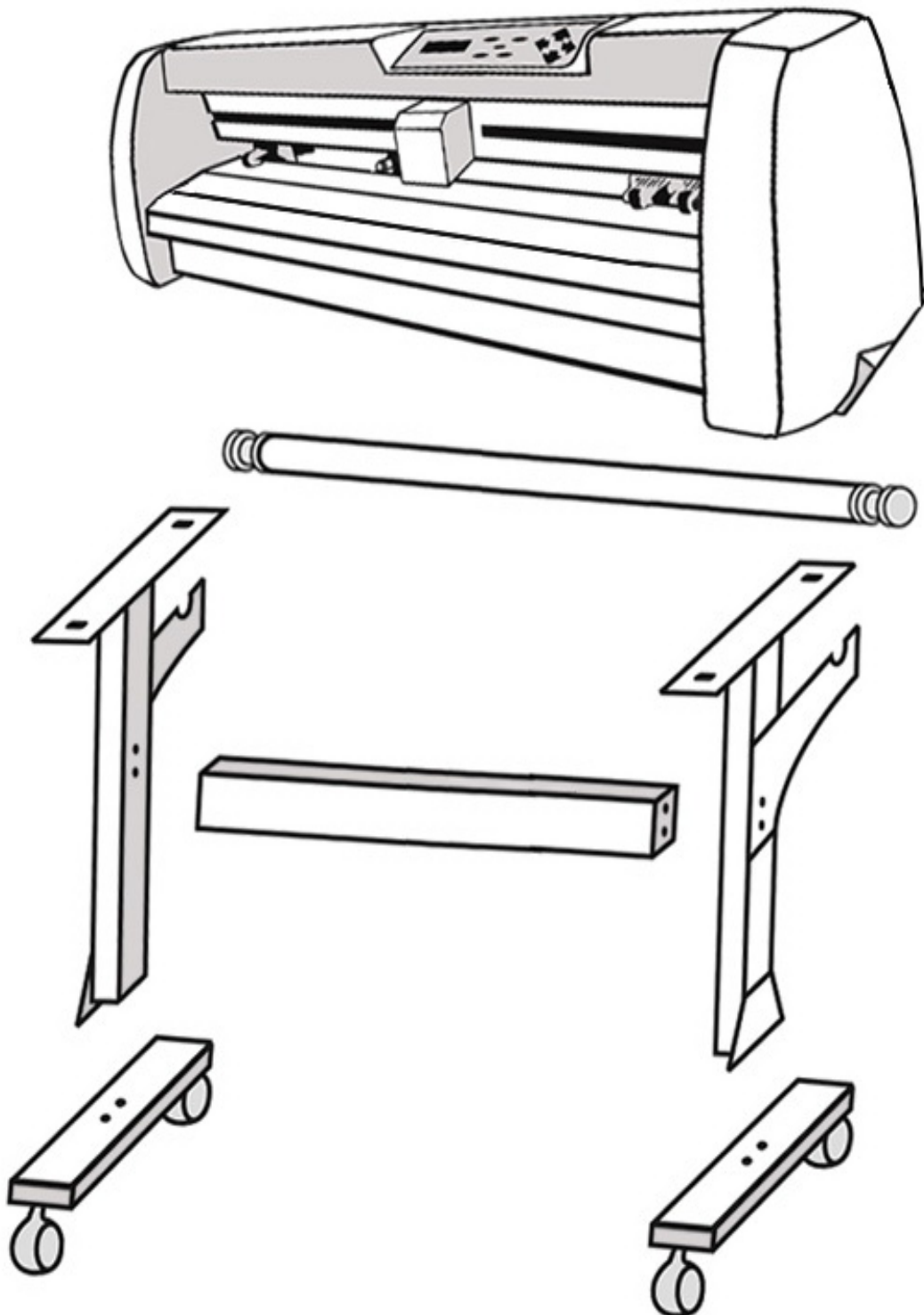
- The stand packing box contains the following list of parts:

Item	Quantity
Leg upright	1 left & 1 right
Vinyl support roller shaft	1
Stand cross bar	1
Leg base	2
Screws	1 bag

- Use M6 screws to bolt the cross bar to the leg uprights (refer to the exploded diagram). Ensure the legs are assembled the correct way around and that they are parallel with each other when tightening the bolts.
- Place the roller shaft into the support brackets and ensure it fits well and rotates freely. This is just to ensure spacing of the brackets is correct – set it aside until the stand is fully assembled.
- Bolt the stand leg bases onto the bottom of the uprights using M6 screws. Ensure all parts

- are square and tighten all bolts.
5. Assemble the stand to the cutting machine. The four holes underneath the machine should align with the corresponding holes on the support brackets. Attach the cutter machine to the stand using short M8 nuts & bolts.
 6. Attach earthen lug to the bottom of the machine in the whole provided using M8 screws.
 7. When the stand is square and aligned tighten all screws.

Appendix 2 Exploded Diagram of the metal stand



Appendix 3 Adjustment of the metal drive roller

WARNING: Do not undertake this adjustment lightly. This adjustment is made very carefully and accurately in the factory by our highly skilled personnel and should only be performed if the machine has been dropped or damaged in some way. Normally it will never need to be adjusted for the life of the machine.

If your machine has suffered a major knock or perhaps a fall you might find that the paper does not track correctly when the machine is cutting. This can cause inaccurate cutting and the ends of larger cuts to not meet as desired.

Remove the bottom cover by unscrewing the 10 retaining screws. You will see the four “runout” adjusting screws as shown in the pictures below.



Loosen the locking nuts on the adjuster screws and by very careful (and small) adjustment of these four screws you can make a very fine adjustment to the runout.

Use a piece of new vinyl at least two meters in length and run it through the machine for the full length backwards and forwards several times. By placing your thumb or marking the edge of the vinyl with a piece of tape you will be able to determine how much the vinyl runs off course.

Make very small adjustments to the adjusting screws noting carefully what effect your adjustment has on the amount of runout. This will take some time to get exactly right but it is a very critical adjustment that determines the overall accuracy of the machine.

Once you are satisfied that the runout is less than 0.1mm over a 2 meter length you can tighten the locking nuts and replace the bottom cover.

Appendix 4 Common problems

NOTE: If you feel uncomfortable performing any of the following procedures please contact your agent for prompt attention to your problem.

(1) Dolly assembly

- A. The knife holder is sluggish to rise: Check the copper connection plates under the dolly cover to ensure they are well connected. This may require the use of a soldering iron to correct.
- B. The Z axis drive (knife up and down): The drive solenoid winding is burnt out or the connection wire between dolly and main PCB is broken.
- C. The knife holder can be raised but not lowered: The magnetic Z drive cylinder is touching the windings, There is a large friction somewhere impeding movement or the -12V from the power supply is missing.
- D. The dolly is jerky when moving or even falls from the guide rail: The nylon guide rollers on the dolly are damaged or badly worn or the toothed drive belt is loose or damaged.
- E. The dolly won't move at all or will only move in one direction: X stepper motor is faulty or X stepper motor driver IC 3955 on main board is faulty.
- F. The dolly moves to one side and slams into the metal plate: The limit sensor or limit sensor PCB is faulty or the limit sensor infra-red beam is not being correctly broken by the interrupter arm fitted to the dolly: Adjust interrupter arm or replace faulty parts as required.

(2) Paper pressure roller & metal drive roller

- A. Motors make noise but the paper is not driven correctly or at all: There is too much pressure between the pinch rollers and the metal drive roller shaft – use one less pressure roller.
- B. Paper runs off to one side while cutting: Incorrect paper installation or the pressure of the pinch rollers is uneven, try using one pinch roller on the left and two close together on the right side.
- C. The pressure pinch roller assembly's do not slide well on the rail: Apply a very small drop of lubricating oil to the shaft and wipe off any excess oil as it will attract dust and make the problem worse. DO NOT spray pressure pack oil such as WD40© or similar on the machine at any time.
- D. The pinch roller pressure is not enough to hold the paper firmly: Adjust the pressure as required or the rubber pinch rollers are worn and require replacement.
- E. The metal drive roller doesn't move (Y axis): The stepper motor is faulty or the driver IC 3955 is faulty.

(3) Power supply

- A. Power cuts on and off when using the machine: The power supply lead is faulty or the power socket on the machine is damaged.
- B. Power won't turn on at all: Check the fuse or the power supply is damaged.

(4) Cutting is random and unpredictable

- A. Connecting serial cable is damaged.
- B. COM port of computer is faulty.
- C. Main PCB of machine is damaged or the MAX202 IC is faulty.
- D. The machine has not reset correctly (press manual reset).
- E. The paper settings in software don't match the available material.
- F. The machine may be affected by static electricity, ensure correct earth.
- G. Ensure all software settings are correct (this is most likely to be the problem).

(5) Not producing any work (no action)

- A. Connecting serial cable is faulty.
- B. Main PCB or MAX202 on main PCB is faulty.
- C. Port settings in software are incorrect (check these settings first).
- D. COM port on computer is damaged.
- E. Machine selection in software is incorrect.
- F. If using "Cutting Master©" software the "soft dog" has not been added, re-install software.

(6) Produced work has jagged edges

- A. Insufficient knife pressure.
- B. Check software settings (settings of compensation parameter, closing parameter and accuracy in cutting output parameter will all affect this).
- C. The internal bearings of the knife holder may be jamming or damaged, check that the blade can spin freely in the holder (**CAUTION** – sharp blade).
- D. Fonts in the font database do not match with the drawing sent to the cutter.

(7) Cutting Inaccuracies

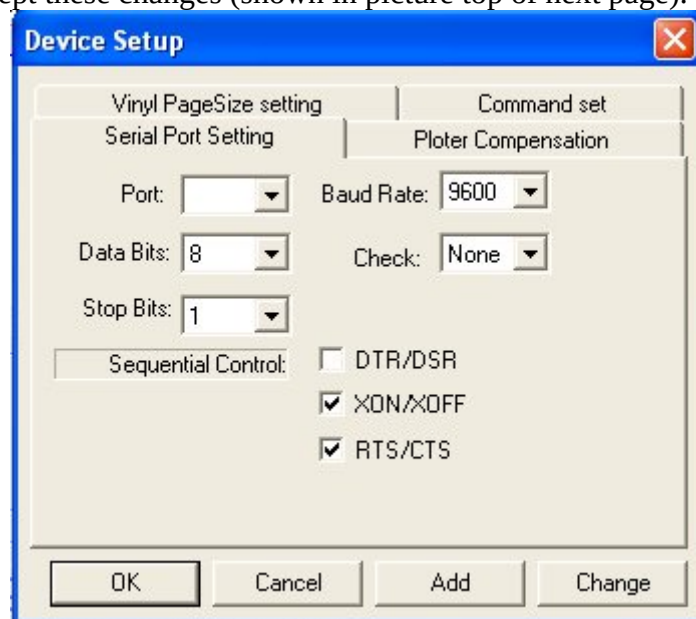
- 1. There are gaps in the produced work: The white blade pressure strip is damaged or worn or the knife blade cannot rotate in the holder freely.
- 2. The cut depth is different on the left and right sides of the machine: The metal roller is not square to the machine, perform adjustment as explained in Appendix II. (**CAUTION** – this situation will be most unusual and would only occur if the machine has been dropped or forced in some way).
- 3. The machine only cuts a length of, say, two metres when three have been sent to the machine for cutting: Output setting in Artcut© (output length limitation in compensation setting) is limiting the length of material the machine can cut.

4. The depth of cut varies across the work at random: Possible static electricity interference, ensure machine is correctly earthed to PC.

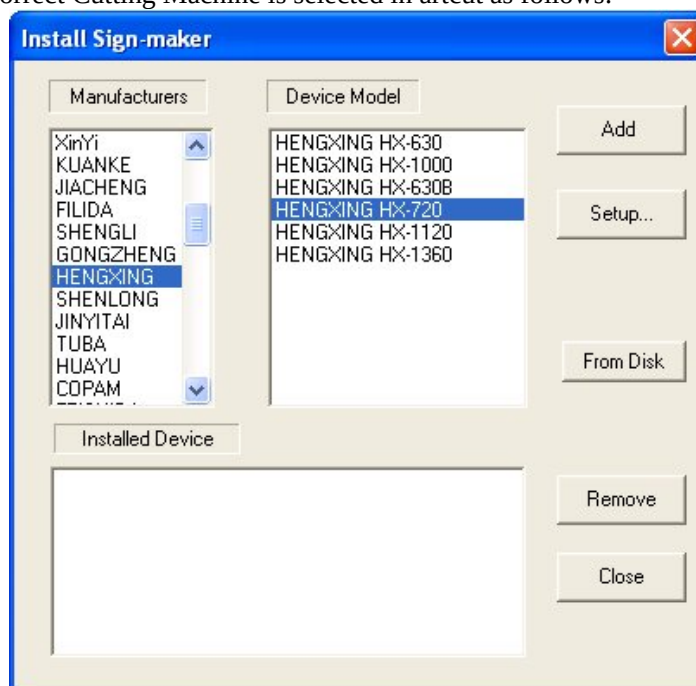
(8) Software Problems

1) Artcut© (Wentai company) operating under Windows 2000 or Win XP requires different settings from Win 98 as follows:

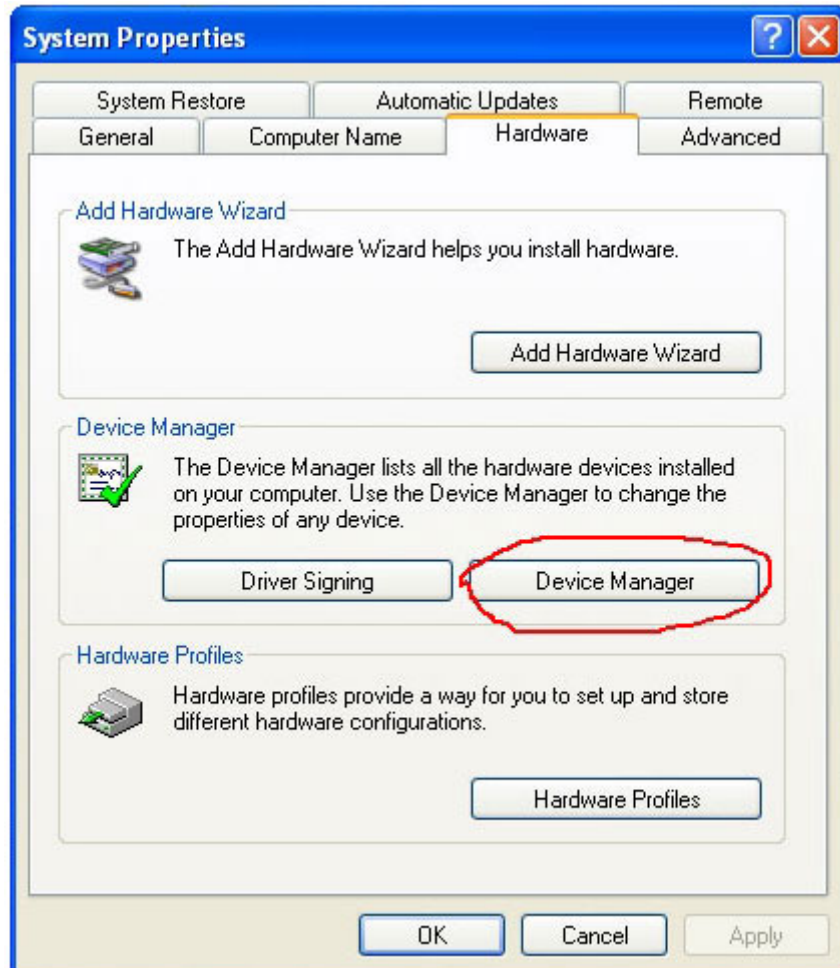
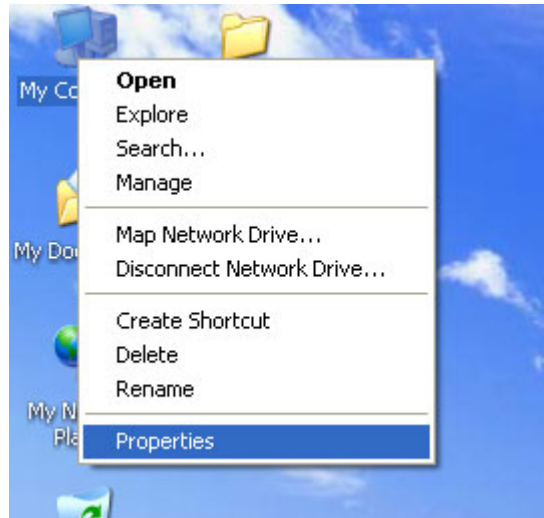
- A. Open “My Computer”, right click the mouse and find:
properties>hardware>device manager>ports (com & LPT) >COM1 or COM2>port settings>flow control>XON/XOFF. Ensure this is enabled.
- B. Open Artcut software and select printer output page. Click on “settings” in the upper left hand corner>port setting>flow control. Select the check boxes alongside XON/XOFF & RTS/CTS, remove the checkmark next to DTR/DSR and accept these changes (shown in picture top of next page).

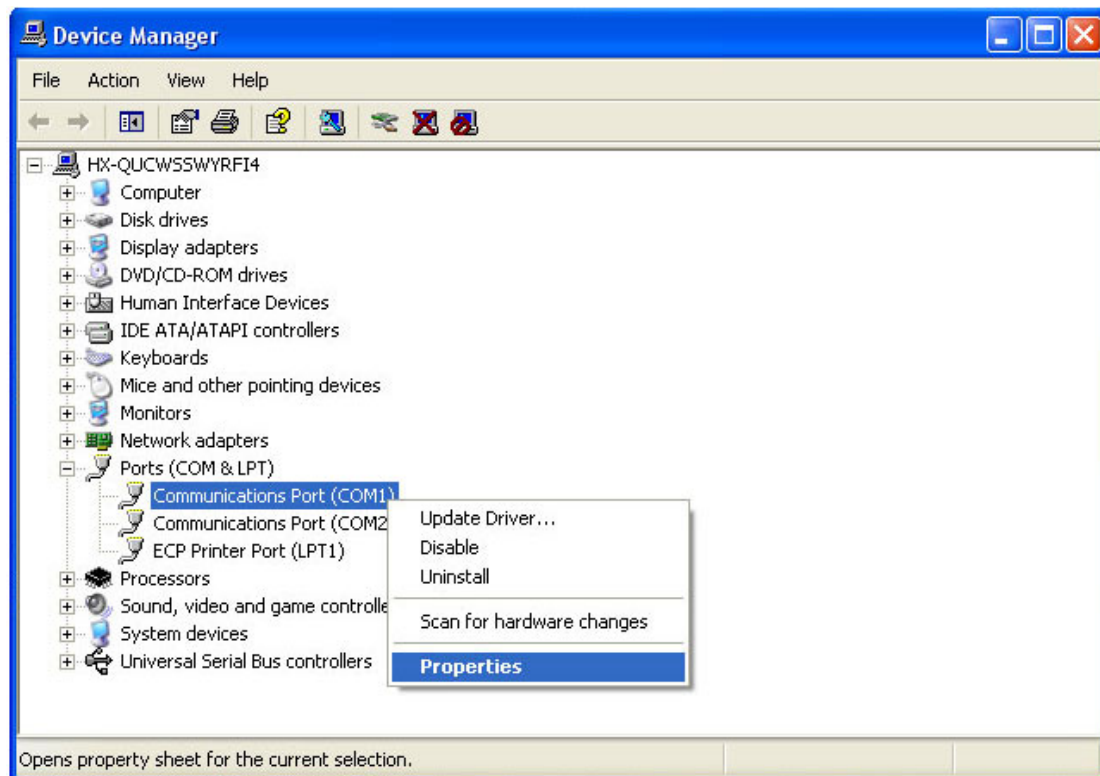
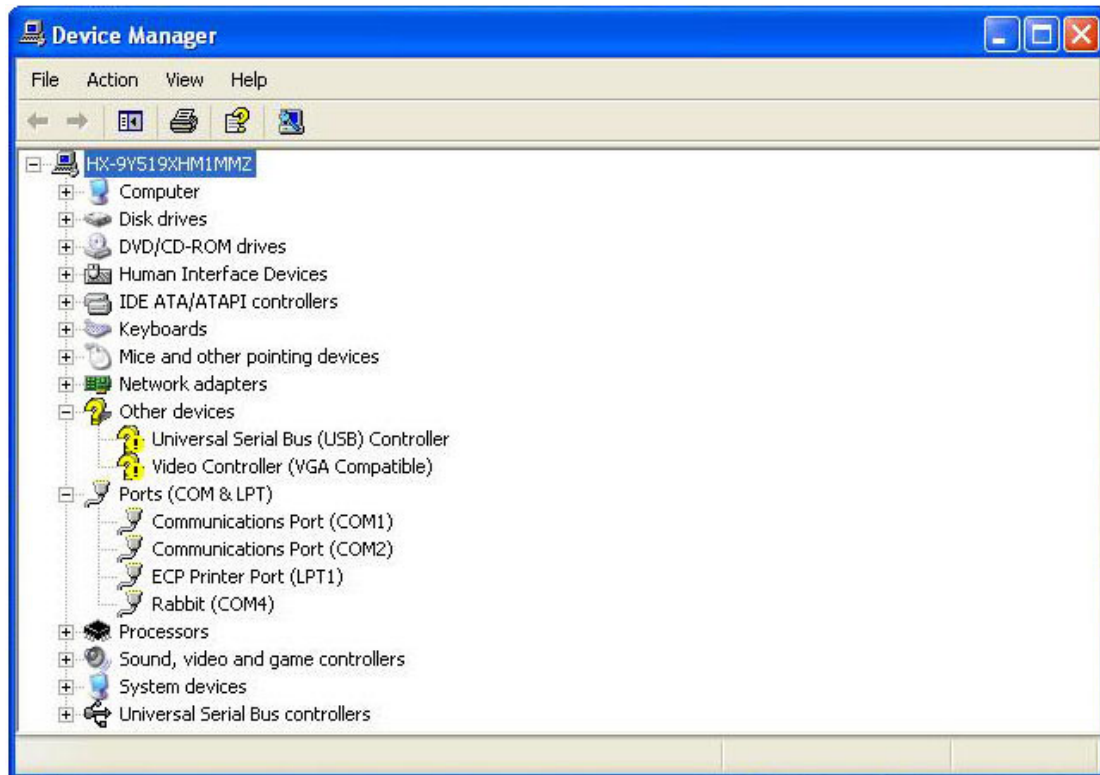


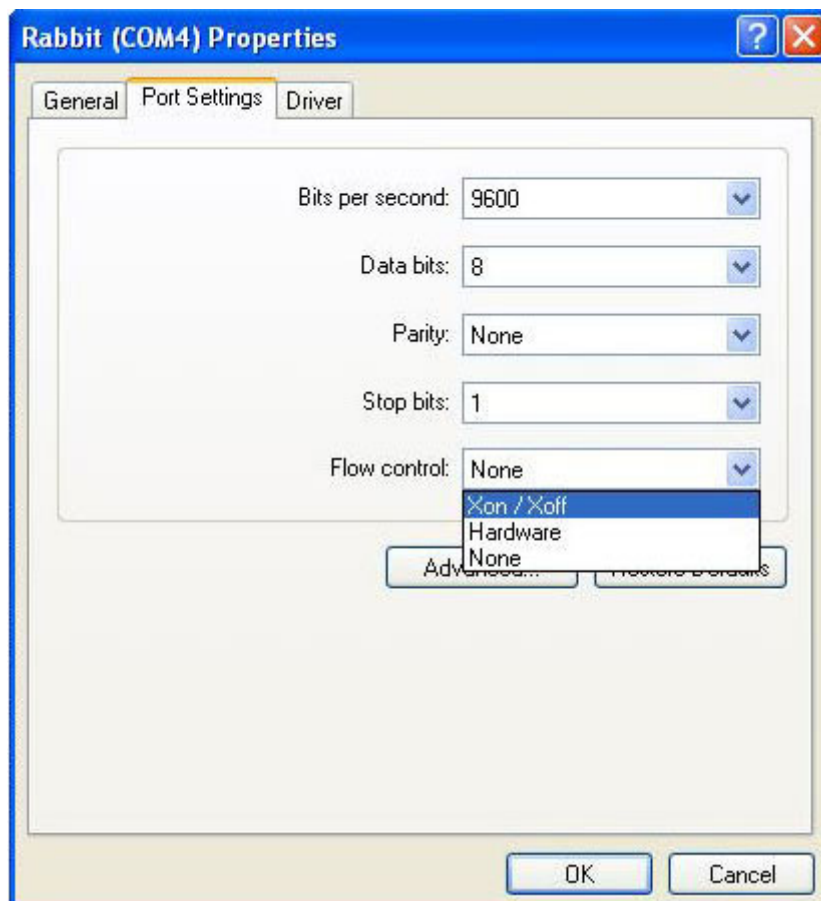
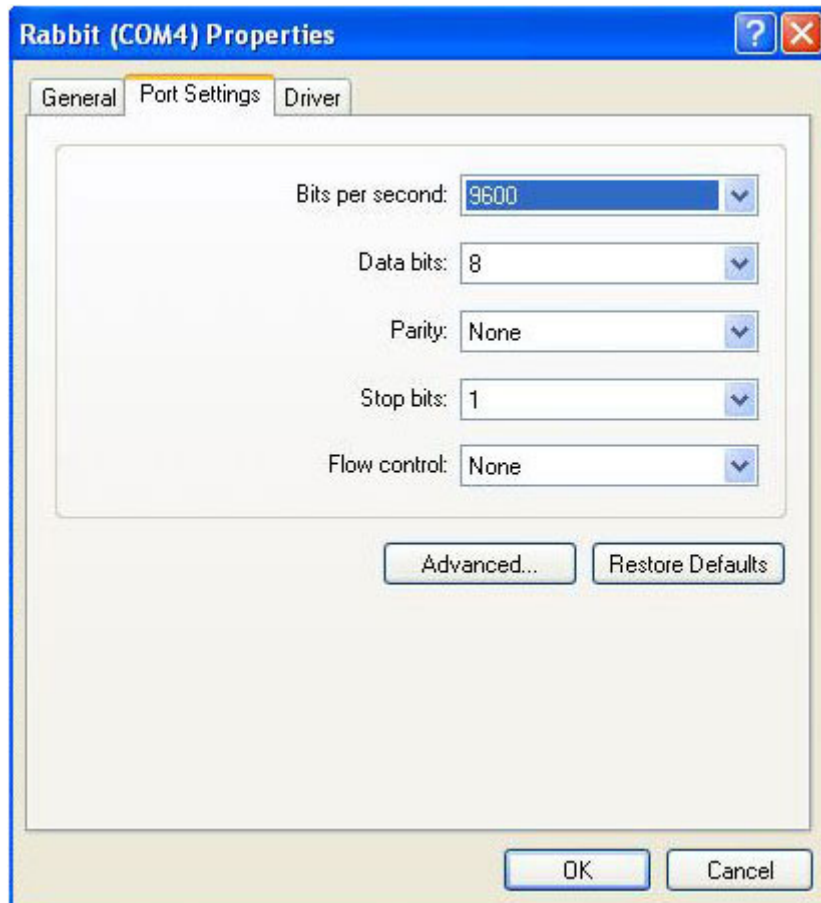
- C. Ensure the correct Cutting Machine is selected in artcut as follows:

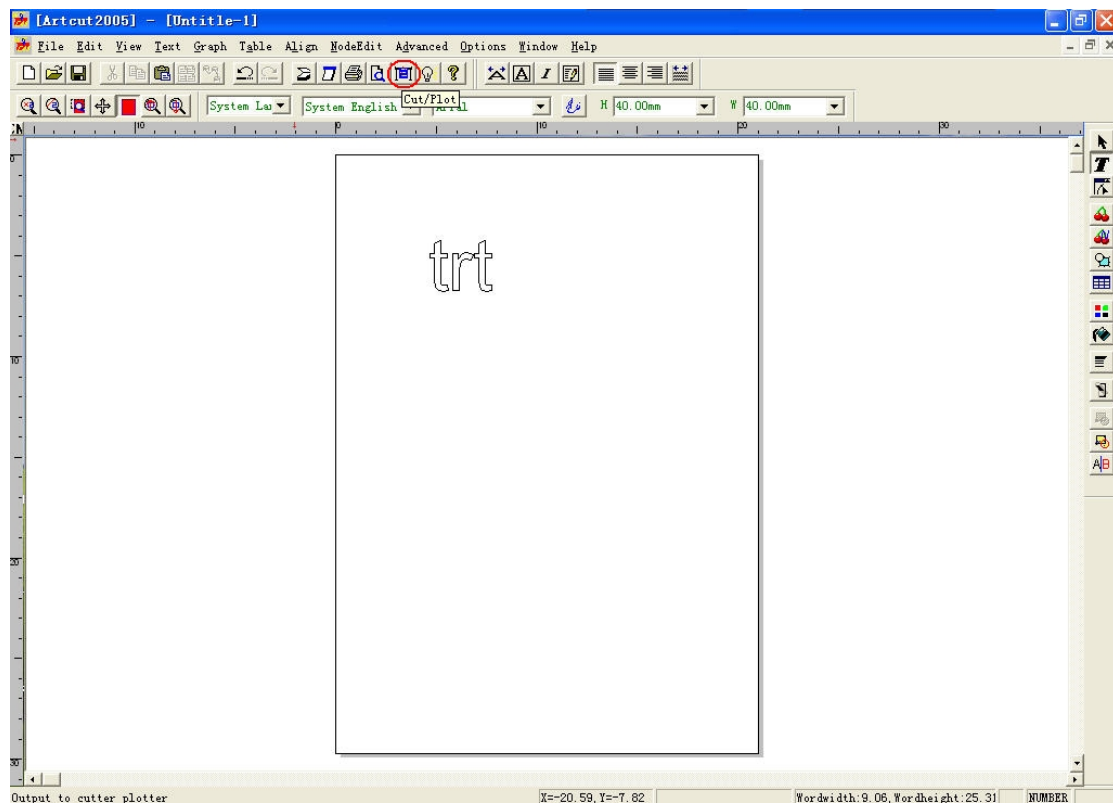
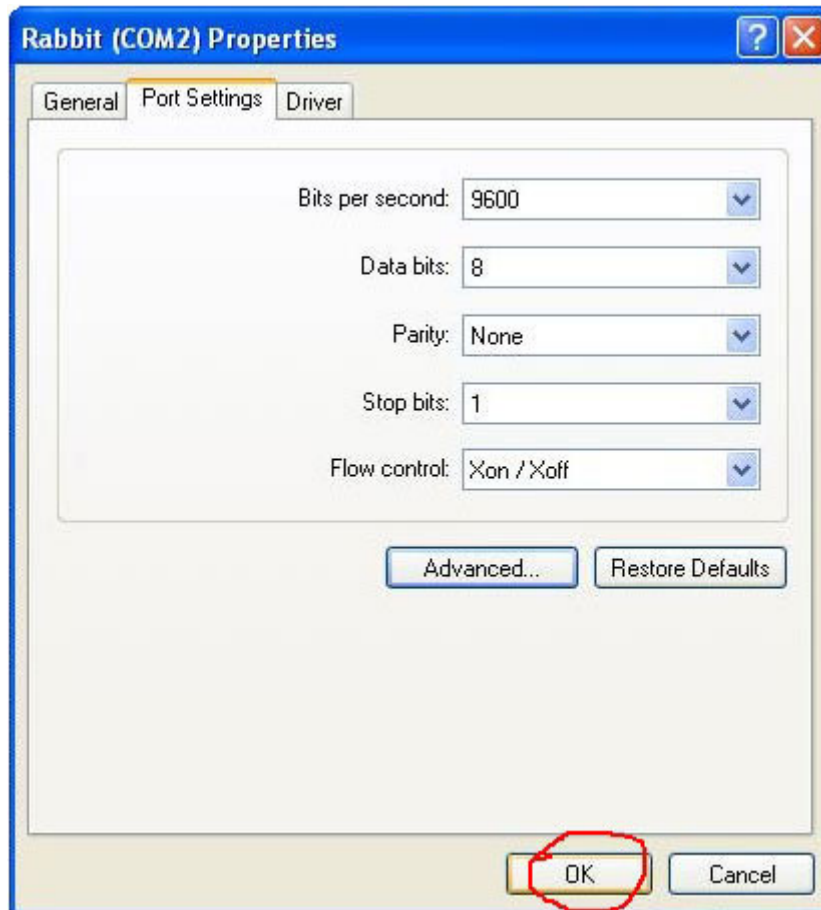


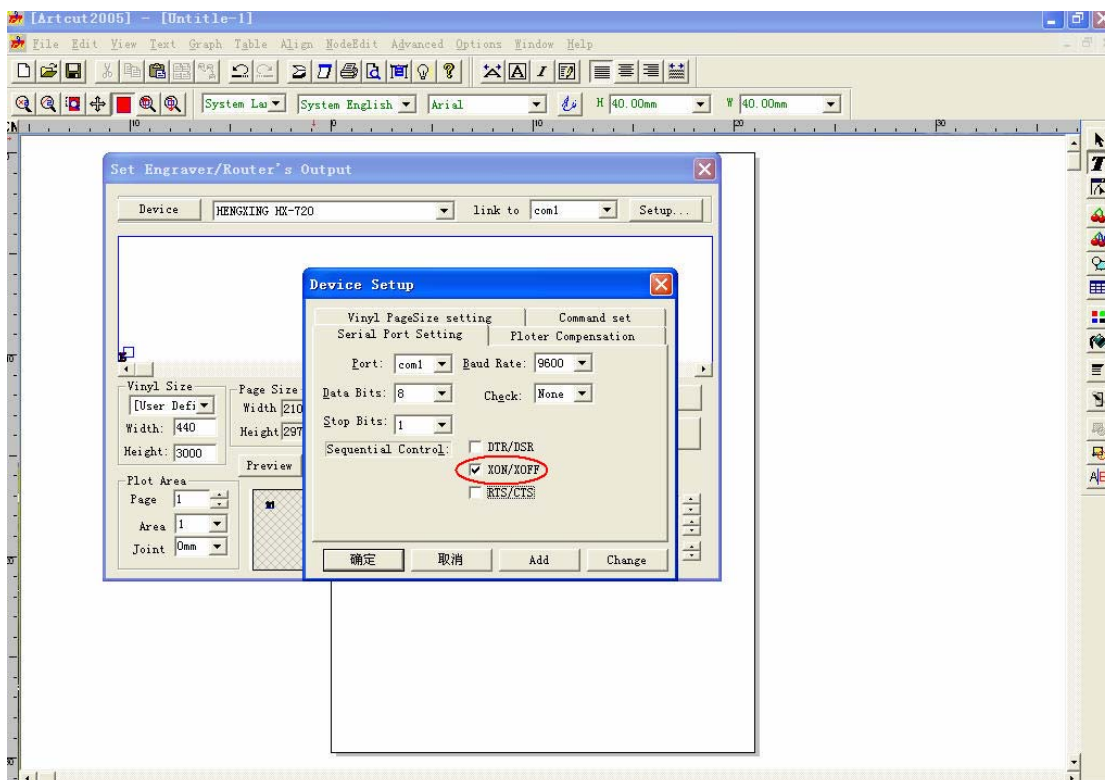
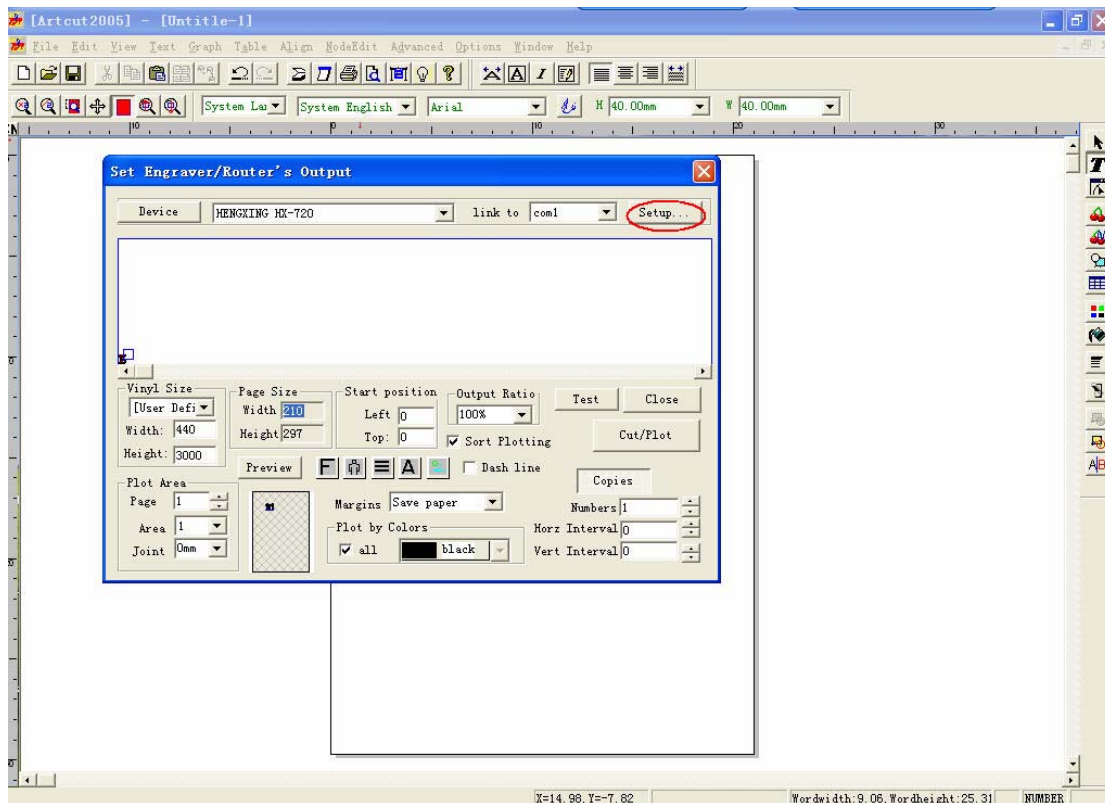
2) Artcut 2005 in Windows XP or Windows 2000, parameters modified method;

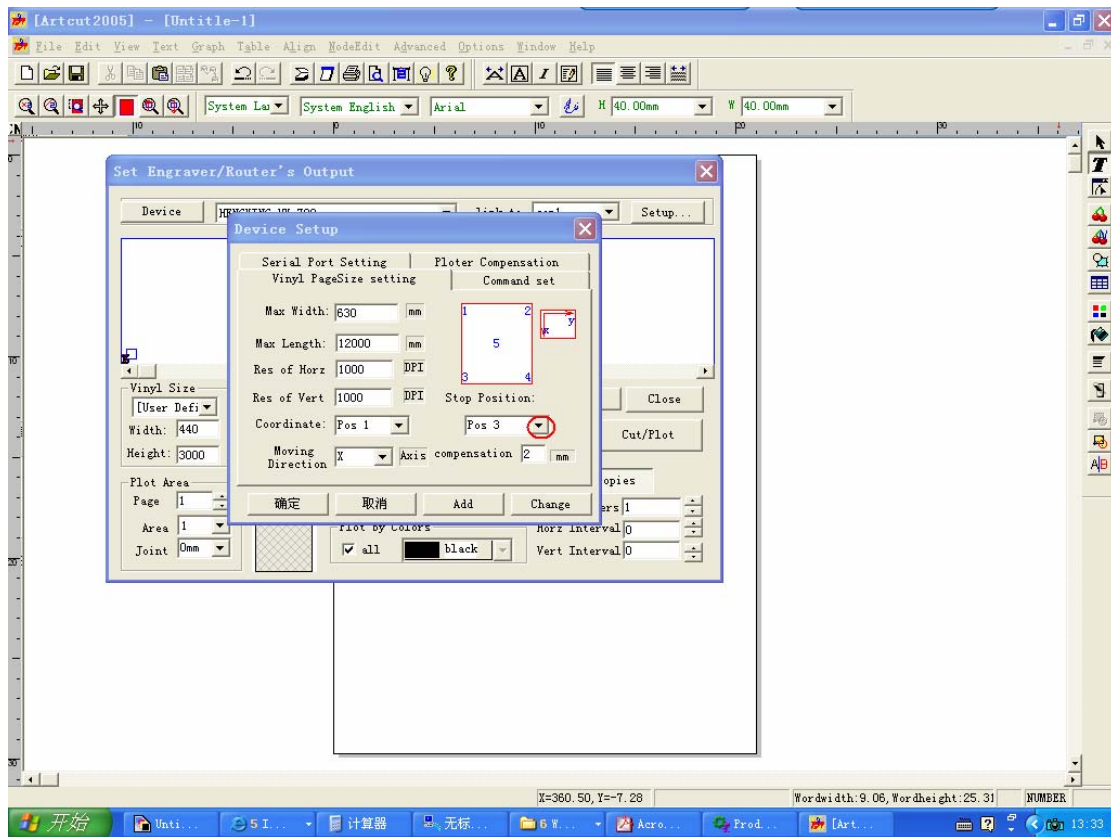
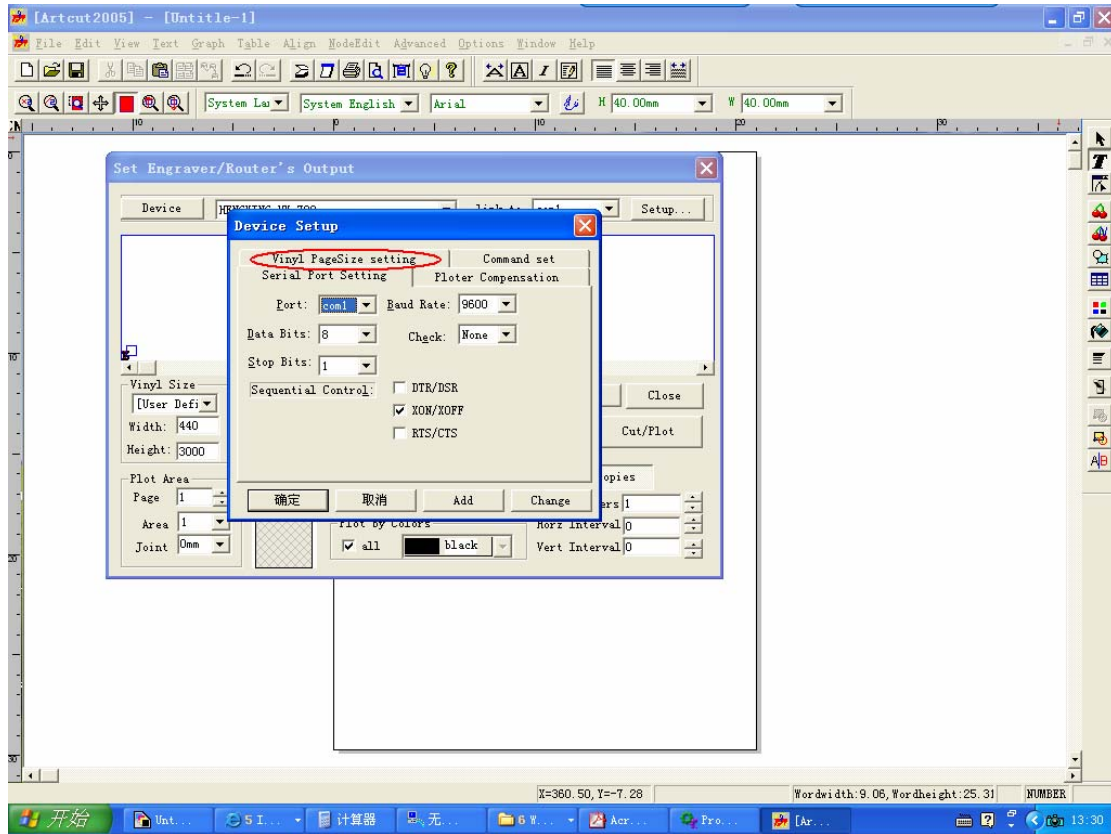


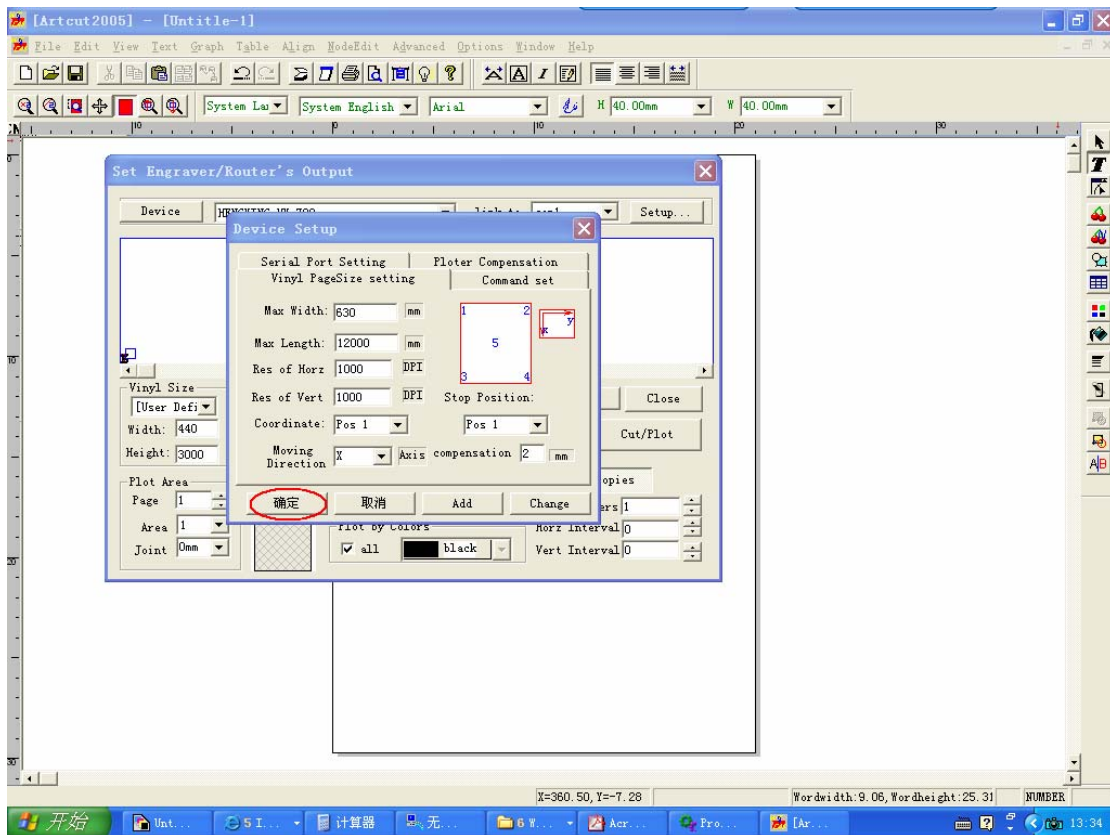
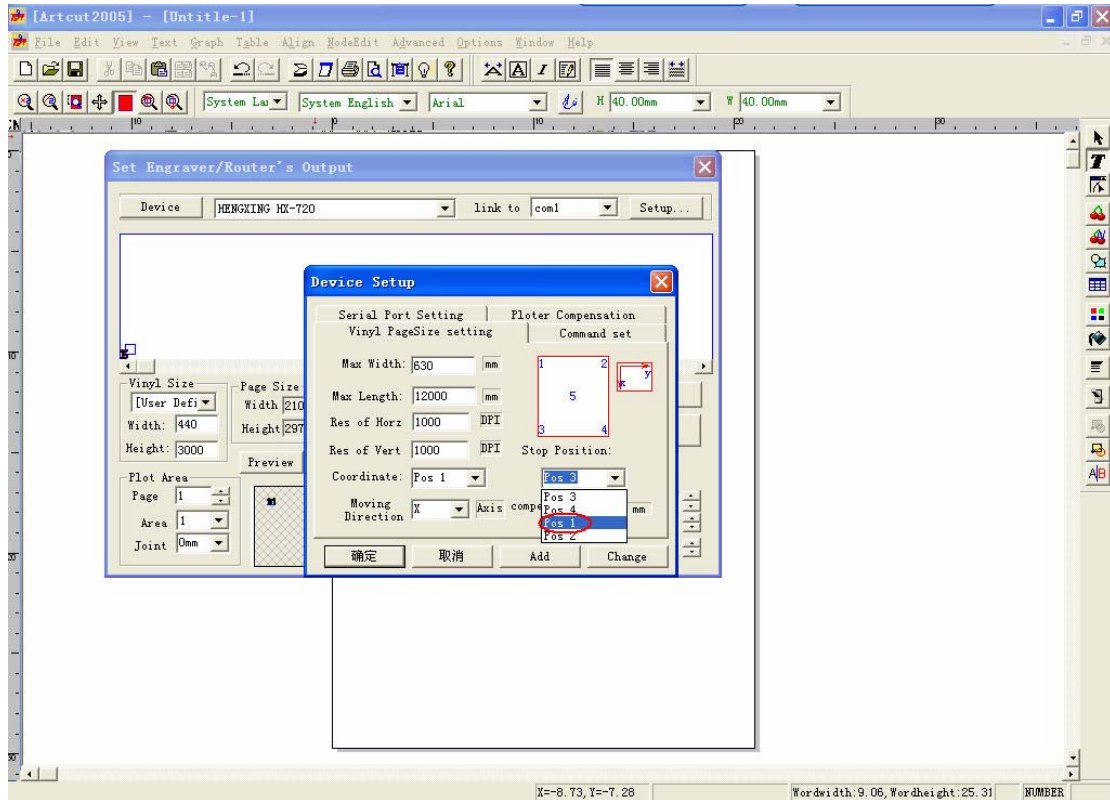












3) USB installed method; please refer to the pictures in USB driving disc.